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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PHILIP RODNEY KWOK

Appeal 2015-002342
Application 11/364,055
Technology Center 3700

Before MICHAEL L. HOELTER, JILL D. HILL, and LISA M. GUIJT,
Administrative Patent Judges.

HILL, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Philip Rodney Kwok (Appellant) appeals under 35 U.S.C. § 134 from the Examiner's final decision rejecting claims 27, 29, 31, 33, 34, 36, 39–49, 51–57, 62–75, 77, 78, and 82–85.¹ We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ Claims 58–60 have been withdrawn from consideration. Appeal Br. 15.

BACKGROUND

Independent claims 27, 34, 44, 51, 56, 66, 67, and 68 are pending.
Independent claim 27, reproduced below, illustrates the claimed invention.

27. An assembly for treating a sleep related breathing disorder by communicating pressurized breathable gas to a patient's airways during sleep, the assembly comprising:

- a chamber adapted to be pressurized with the breathable gas, the chamber being defined at least in part by a seal adapted to provide an effective seal with at least the patient's nasal airways during continuous positive airway pressure (CPAP) treatment while the patient is sleeping; and
- a harness to support the seal against the patient's face during CPAP treatment, wherein the harness comprises:
 - a cap portion adapted to engage an occipital region of the patient's skull, the cap portion including an upper strap portion and a lower strap portion that cooperate to define a single, continuous opening, the opening being adapted to at least partly receive the occipital region, and at least a portion of the cap portion is adapted to angle downwardly from a position superior to an upper portion of the patient's ear to a position inferior the upper portion and posterior to the patient's ear, said portion of the cap portion being adapted to extend from superior to the patient's ear to engage the occipital region, the cap portion engaging a curved region of the occiput at a lower rear region of the patient's skull such that the cap portion is fixed relative to the patient's face; and
 - side straps adapted to engage with slotted connectors to support the chamber on the patient's face, each of the side straps having a proximal end fixed relative to the cap portion and a distal end that is threaded through a respective one of the slotted connectors and doubled back to effect an adjustable hook and loop connection, each said side strap being dimensioned and positioned to extend from a position adjacent a top portion of the patient's ear at a downward angle, across the patient's cheeks, towards the respective slotted connector, wherein

the harness is adapted to support the chamber on the patient during sleep and is adapted to maintain the effective seal during the CPAP treatment, even if the patient moves while asleep, and

none of the side straps is adapted to pass under the patient's ear.

REJECTIONS²

I. Claims 44–57, 62–65, 72, 73, 75, 82, 83, and 85 stand rejected under 35 U.S.C. § 112 ¶ 1, as failing to comply with the written description requirement. Final Act. 6.

II. Claims 31, 33, 34, 36, 39–43, 56, 57, 64, 65, 73, 83, and 84 stand rejected under 35 U.S.C. § 112 ¶ 2.³ Final Act. 7.

III. Claims 27, 33, 34, 39, 41–43, 56, 62–65, 72, 73, 75, and 82–85 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kopala (US 5,042,478, iss. Aug. 27, 1991), Gongwer (US 3,653,086, iss. Apr. 4, 1972), and Rudolph (US 5,265,595, iss. Nov. 30, 1993). Final Act. 8.

IV. Claims 29 and 36 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, and Feder (US 5,046,200, iss. Sept. 10, 1991). Final Act. 17.

V. Claims 31 and 40 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, and Byram (US 5,464,010, iss. Nov. 7, 1995). Final Act. 18.

² The Examiner has withdrawn the rejection of claims 27, 29, 31, 34, 36, and 39–43 under 35 U.S.C. § 112 ¶ 1, and the rejection of claim 85 under 35 U.S.C. § 112 ¶ 2. Ans. 63–64.

³ Claims 62, 63, 72, 75, and 82 were mistakenly rejected under 35 U.S.C. § 112 ¶ 2. Ans. 64. We understand the rejection of these claims to be withdrawn.

VI. Claim 57 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, and Bierman (US 2,444,417, iss. July 6, 1948). Final Act. 18.

VII. Claims 44–47, 55, 74, and 77 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kopala, Rudolph, Feder, and Baker (US 4,910,806, iss. Mar. 27, 1990). Final Act. 19.

VIII. Claims 48 and 49 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kopala, Baker, Rudolph, Feder, and Lombard (US 2,248,477, iss. July 8, 1941). Final Act. 22.

IX. Claims 51–54 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, and Petrie (US 5,361,416, iss. Nov. 8, 1994). Final Act. 23.

X. Claims 66 and 69 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, and Feder. Final Act. 26.

XI. Claims 67 and 70 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, Feder, and Sullivan (US 5,243,971, iss. Sept. 14, 1993). Final Act. 29.

XII. Claims 68 and 71 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kopala, Baker, Rudolph, Feder, and Sullivan. Final Act. 32.

XIII–XXXVI. Claims 27, 29, 31, 33, 34, 36, 39–49, 51–57, 62–75, 77, 78, and 82–85 stand rejected under various grounds of non-statutory obviousness-type double patenting. Final Act. 37–66.

OPINION

Rejections I and II — 112 Rejections

Appellant does not refute the rejection of claims 44–57, 62–65, 72, 73, 75, 82, 83, and 85 under 35 U.S.C. § 112 ¶ 1, or the rejection of claims 31, 33, 34, 36, 39–43, 56, 57, 64, 65, 73, 83, and 84 under 35 U.S.C. § 112 ¶ 2. These rejections are therefore summarily sustained.

Rejections III–XII — Non-Analogous Art

Rather than arguing the matter of Rejections III–XII separately, Appellant contends that certain references should not have been used in a rejection because they are non-analogous art. We consider whether each challenged reference is analogous art in turn, noting which rejections rely upon that reference.

Gongwer

Regarding Rejections II–VI and IX–XI, Appellant argues that Gongwer is non-analogous art because it is neither in the field of Appellant’s endeavor nor reasonably pertinent to a problem faced by Appellant. Appeal Br. 22–24. Appellant appears to define his field of invention as “an assembly for treating a sleep related breathing disorder by communicating pressurized breathable gas to a patient’s airways during sleep.” *Id.* Appellant contends that Gongwer is directed to a streamlined swim mask and therefore is not in the same field of endeavor. *Id.* at 22.

Appellant defines the problem faced in terms of the “goal of the present technology” as “creat[ing] a mask, straps, and/or assembly that are worn during sleep that provide an effective seal and are comfortable and able to deal with movement during sleep.” Appeal Br. 22 (citing problems discussed at Spec. p. 1, l. 12 – p. 2, l. 19). More specifically, Appellant

defines the problems as (1) “proper tensioning for CPAP treatment,” (2) preventing mask pivoting from incorrect tightening of straps “(e.g. changing the force vector),” and (3) preventing discomfort during sleep (and possible resulting non-compliance). *Id.* at 22–23. According to Appellant, the Specification “makes clear that nasal masks for administering CPAP suffer different problems than masks for treatment from respirators or breathing apparatus with a full face cover.” *Id.* at 23. Appellant contends that Gongwer does not address any of these problems, instead being directed to decreasing drag while swimming. *Id.*

The Examiner responds that one skilled in the art would not have been limited to headgear/harnesses for treating a sleep-related breathing disorders via communication of pressurized breathable gas to a patient, but rather, one [skilled] in the art would have found it obvious to look to . . . other respiratory applications, such as in the Gongwer and Byram references, as well as other harness assemblies for attaching to a user, such as the Feder, Byram, and Baker references.

Ans. 64–65.

The Examiner also responds that Appellant defines the “problems faced” as patient non-compliance due to discomfort, and contends that each of Gongwer, Feder, Byram, Baker, and Petrie provide “explicit or implicit teachings relating to improved comfort of a harness for connecting a device to a patient’s face.” Ans. 65.

Specifically regarding Gongwer, the Examiner responds that Gongwer was relied on for disclosing a “rear/cap portion of the harness 62 including upper and lower strap portions providing an opening therebetween (as best shown in Fig. 2),” and that one skilled in the art “would have recognized

from Fig. 3 that the upper and lower strap portion” configuration of Gongwer’s harness 62 “would provide a larger area of contact on the back of the user’s head, thus better conforming to the topography of the rear of the user’s head,” which is “reasonably pertinent to the problem of providing comfort and compliance.” Ans. 65–66.

The analogous-art test requires that the Board show that a reference is either in the field of the applicant’s endeavor or is reasonably pertinent to the problem with which the inventor was concerned in order to rely on that reference as a basis for rejection.” *In re Kahn*, 441 F.3d 977, 986-87 (Fed. Cir. 2006) (citing *In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992)). The “field of endeavor” prong asks if the structure and function of the prior art is such that it would be considered by a person of ordinary skill in the art because of the similarity to the structure and function of the claimed invention as disclosed in the application. *In re Bigio*, 381 F.3d 1320, 1325-27 (Fed. Cir. 2004). “A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor’s endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor’s attention in considering his problem.” *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992).

Looking to Appellant’s Specification, we define the “field of the invention” to be perhaps as narrow as “a harness assembly for a nasal mask.” Spec. ¶ 2 (capitalization omitted). This defined field is consistent with the entirety of the Specification, including the claims. We further define the problem faced by Appellant as facilitating patient compliance by providing an effective and acceptably comfortable nasal mask seal against a user’s face. *Id.* at ¶ 4. The effective mask seal is maintained via “correct

tension in the harness,” because “[u]nder-tensioning results in a loose mask and poor seal” and “[o]ver-tensioning can lead to discomfort for the wearer.” *Id.* Further, Appellant employs (1) the cap portion 44 to “cover[] and grip[] the occipital region of the wearer to facilitate securely locating the cap portion during use” (*id.* at ¶ 39), (2) the cap portion 72 with opening 74 through which “the occiput protrudes to assist in securely locating the cap portion” while reducing heat buildup (*id.* at ¶ 46–47), (3) the couplers 48, 60, 70 to allow the harness elements to move independently of one another during adjustment and to retain mask position and secure attachment during movement of a harness part (*id.* at ¶ 42), and (4) hook and loop connects allowing adjustment for better user fit (*id.* at ¶ 41). Each of these components is directed to solving a specific problem related ultimately to providing patient comfort while retaining a secure seal.

Gongwer is directed to a streamlined swim mask that is “secured to the head of the swimmer” and includes a sight plate 19 and gasket 25 that cover the user’s eyes and nose and cooperate to seal the eyes and nose of the wearer from water infiltration. Adjustable, flexible strap 62 applies adequate tension to the mask and the gasket 25 to facilitate a suitable seal. Gongwer, Abstract; 2:49–51, 68–75; 3:67–73.

We find that Gongwer’s flexible strap 62 is a harness assembly. Further, because Gongwer’s flexible strap 65 secures a gasket 25 that seals the user’s nose, we find that Gongwer’s gasket 25 and sight plate 19 form a nasal mask. We thus find that Gongwer is in the same field of invention. Further, we find that Gongwer’s flexible strap 62 is relevant to the problems of providing an effective nasal mask seal to a user’s face. We therefore agree with the Examiner that Gongwer is analogous art.

Feder

Regarding Rejections IV, VII, VIII, and X–XII, Appellant argues that Feder is non-analogous art because Feder is directed to a “reversible, quick-adjustable diver’s face mask strap,” rather than a mask that is comfortable when worn during sleep while providing an effective seal. Appeal Br. 24. Feder does not contemplate pressurized gas acting in a direction that breaks a seal with the user. *Id.* at 25. Rather, according to Appellant, Feder’s mask is “less harsh on a user’s head than rubber straps,” avoids tangled hair and hook-type material wearing out, achieves the coefficient of friction available from rubber straps, can be used with a diver’s hood, and prevents straps from loosening as a diver descends. *Id.* at 24–25.

The Examiner responds that preventing hair tangling improves user comfort, and is thus pertinent to Appellant’s problem, and that Feder discloses using fabric for the upper and lower straps of a harness that conforms to the shape of a user’s head to provide “a comfortable, less-harsh interface between the user’s head and the strap as well as avoiding tangling.” Ans. 66 (citing Feder 3:6–16 and 1:14–18).

We find that Feder’s mask strap is a harness assembly. Further, because Feder’s mask strap is configured to secure a mask that seals the user’s nose, we find that Feder’s mask strap is a nasal mask harness, and is therefore in the same field of invention. Further, we determine that Feder’s mask strap is relevant to providing an effective mask seal while maintaining user comfort. *See* Feder 1:16–20 (describing a prior art problem as: “This new generation of mask straps is gentler to the back of the wearer’s head and the tangling of hair is largely avoided. However, the mask strap is not as securely seated on the back of the diver’s head as in the case of the old

rubber straps.”). We therefore agree with the Examiner that Feder is analogous art.

Byram

Regarding Rejection V, Appellant argues that Byram is non-analogous art, being directed to a respirator (full face) that can be partially removed and held beneath a user’s chin when not in use. Appeal Br. 25. According to Appellant, Byram addresses problems associated with a user leaving a contaminated area and temporarily removing the respirator to speak with another person, does not address comfort during sleep, and “does not deal with pressurized gas at the user interface” because Byram’s respirator provides gas at atmospheric pressure. *Id.*

The Examiner responds that Byram was relied on for disclosing a “particular spatial configuration” of harness side straps in relation to a rear strap – Byram’s spatial configuration of the rear and side straps conforms to the user’s head and “in view of this teaching, one [skilled] in the art would have found the Byram reference to be reasonably pertinent to the problem of providing increased comfort and compliance.” Ans. 67.

We find that Byram’s individual straps 14 and crown member 30 form a harness assembly. Further, because Byram’s harness assembly 14, 30 is configured to secure a respirator body 20 that seals the user’s nose, we find that Byram’s harness 14, 30 is a nasal mask harness, and is therefore in the same field of invention and that it also addresses the problem of providing user comfort. We therefore agree with the Examiner that Byram is analogous art.

Baker

Regarding Rejections VII, VIII, and XII, Appellant argues that Baker is non-analogous art because it is directed to a diver mask strap and solves problems related to buoyancy and hair tangling. Appeal Br. 26.

The Examiner responds that Baker is relied on for disclosing a single rear band 10 that “comfortably contacts a larger area of the back of user’s head and avoids pulling or tangling of the user’s hair,” which “would have been recognized by one [skilled] in the art as being reasonably pertinent to the problem of providing increased comfort and compliance.” Ans. 67.

We find that Baker’s adjustable elastic strap 10 is a harness assembly. Further, because Baker’s strap 10 secures a mask 12 that seals the user’s nose, we find that Byram’s strap 10 is a nasal mask harness, and is therefore in the same field of invention. Further, Byram’s hook and loop fastener is similarly employed to allow adjustment for better user fit thus addressing the problem of providing for user comfort. Spec. ¶ 41; Baker 2:24–54 (“a hook and loop type fastener [is] provided in operative relationship with ribbon members **18**, **20** for adjustably attaching strap **10** to face mask **12**.”). Baker is analogous art.

Petrie

Regarding Rejection IX, Appellant argues that Petrie is non-analogous art because it is directed to a chin strap for a sleep apnea mask, and is not reasonably pertinent to the problems face by Appellant. Appeal Br. 26.

The Examiner responds that Petrie is relied on for disclosing a coupling member 20 between two strap elements of a harness, which provides “adjustability between strap elements” to increase user comfort and compliance. Ans. 68.

Although Petrie’s harness is not a harness assembly for a nasal mask, Petrie’s harness assembly employs D-rings 20 allowing straps 16, 19 to adjust to suitably secure the chin cup “according to the comfort of the user.” Petrie 3:1–3. Thus, Petrie is relevant to a problem faced and solved by Appellant in employing D-rings, because Petrie’s D-rings allow its harness elements to move independently of one another during adjustment and retain the attached device’s proper position. *See* Spec. ¶ 42, Petrie 3:1–3, 18–21. Petrie is analogous art because its disclosure is reasonably pertinent to a problem faced by Appellant.

Rejections III–XII — Reasoning

Rather than arguing the claimed subject matter of Rejections III–XII separately, Appellant contends that the reason for combining certain references lacks a rational basis. We consider whether each challenged reasoning has a rational basis, noting which rejections rely upon that reasoning. The claims subject to each rejection stand or fall with the determination of whether the reasoning has adequate support for the conclusion of obviousness.

Kopala and Gongwer

Regarding rejections III–VI and IX–XII, Appellant argues that the Examiner’s proffered reason for combining Kopala and Gongwer lacks a rational basis because (1) there is no recognition that Kopala suffers from lack of stability, (2) nothing suggests that Gongwer’s straps would be more stable than Kopala’s straps, and (3) without evidentiary support, the rejection is based purely on the Examiner’s opinion, which is insufficient for

a determination of obviousness, (4) one skilled in the art would not have looked to Gongwer to modify Kopala because the force vectors to provide appropriate sealing in Gongwer and Kopala are different, (5) one skilled in the art would not have looked to Gongwer to modify Kopala because Gongwer's device supplies air to a user's mouth, separate from the mask around the user's eyes and nose, while Kopala supplies air exclusively to the patient's nose with a mask supported by headgear – and sealing to keep a pressurized air supply from escaping is different than sealing to keep water from getting into the static environment, and (6) the allegation of increased stability by modifying Kopala with Gongwer is contrary to Kopala's desire for the mask to remain adjustable. Appeal Br. 26–28.

The Examiner responds that the stated reason for modifying Kopala in view of Gongwer (i.e., to provide a more stable attachment interface between the mask and the patient), “is not based on opinion, but rather [on the rationale that] one of ordinary skill in the art would have found it apparent that [Gongwer's strap configuration] would better conform to a greater area of the back of the user's head versus the single thin band strap 24 of Kopala” to provide a more stable attachment interface between the mask and the patient. Ans. 69.

It is well settled that simple substitution of one known element for another to obtain predictable results is an exemplary rationale that supports a conclusion of obviousness. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 401 (2007). Thus, Kopala (and the other cited references) need not identify a stability issue or improved stability for the Examiner's reasoning to have a rational basis.

The Examiner finds, and Appellant does not refute, that Kopala discloses a device that differs from the claimed invention only by the substitution of some components of Kopala (i.e., the strap 24) with other components of Gongwer (i.e., a cap portion including upper and lower straps that cooperate to define an occipital opening) whose functions were known in the art. Final Act. 8–9. The Examiner contends that one skilled in the art could have substituted one known element for another, and the results of such a substitution would have been predictable, for example an increased stability (i.e., “due to the upper and lower strap portions contacting more of the patient’s occipital region/occiput and conforming more to the shape of the patient’s head”). *Id.* at 9–10. If the results of the combination are indeed predictable, neither Kopala nor Gongwer must explicitly recite the results to provide a rational basis therefore.

Regarding Appellant’s argument that the Examiner’s proffered reasoning lacks a rational basis because one skilled in the art would not have looked to Gongwer to modify Kopala, as the force vectors to provide appropriate sealing in Gongwer and Kopala are different (Appeal Br. 27), the Examiner responds that replacing Kopala’s thin single band 24 with Gongwer’s upper and lower strap portions allows better conformance with the back of the user’s head and “would have left the sealing force vectors of Kopala unchanged.” Ans. 69–70.

Lacking any evidentiary support regarding different force vectors being necessary in Kopala and Gongwer for appropriate sealing, and lacking a technical explanation regarding the cause and effect of such force vectors, we are not persuaded by Appellant’s argument. *See In re De Blauwe*, 736

F.2d 699, 705 (Fed. Cir. 1984) (“Arguments and conclusions unsupported by factual evidence carry no evidentiary weight”).

Appellant argues that the Examiner’s proffered reasoning lacks a rational basis because one skilled in the art would not have looked to Gongwer to modify Kopala, since Gongwer’s device supplies air to a user’s mouth, separate from the mask around the user’s eyes and nose, while Kopala supplies air exclusively to the patient’s nose with a mask supported by headgear – and sealing to keep a pressurized air supply from escaping is different than sealing to keep water from getting into the static environment. Appeal Br. 27–28.

The Examiner responds that the proposed modification of the rear strap “did not include adjustments to the sealing forces, but rather all sealing forces of Kopala would remain the same as required by the Kopala device.” Ans. 70.

Lacking evidentiary support and a detailed explanation regarding why Kopala’s and Gongwer’s sealing types (or differences in direction from which pressure acts on the seal) would cause one skilled in the art not to combining their harness teachings, we are not persuaded by Appellant’s argument.

Appellant then argues that the Examiner’s proffered reasoning lacks a rational basis because the allegation of increased stability by modifying Kopala with Gongwer is contrary to Kopala’s desire for the mask to remain adjustable. Appeal Br. 28.

Regarding the desire for Kopala’s strap to remain adjustable, the Examiner responds that one skilled in the art would have recognized the ability to adjust the positioning of the proposed modified harness on a user’s

head to provide greater comfort for the user, and that replacing the rear strap portion of Kopala with that of Gongwer “would not affect the ability of the straps/harness of modified Kopala to be adjustable.” Ans. 70.

The Examiner has the better position. It is unclear why modifying Kopala’s strap 24 to include Gongwer’s cap portion having upper and lower straps would affect the adjustability of Kopala’s harness in a way that would cause one skilled in the art not to combine Kopala and Gongwer.

For the reasons explained above, we are not persuaded that there is error in the Examiner’s reason for combining Kopala and Gongwer.

Kopala and Feder/Byram

Regarding Rejections IV, V, VII, VIII, X–XII, Appellant argues that the Examiner’s proffered reason for combining Kopala with Feder and/or Byram lacks a rational basis because (1) there is no recognition that Kopala suffers from problems allegedly solved by Feder or Byram, (2) the force vectors in Feder and Byram are sufficiently different from the force vectors required in Kopala that one skilled in the art would not have looked to either Feder or Byram to modify Kopala, and (3) neither Feder nor Byram have any disclosure that the devices disclosed therein would be of any use for a sleeping patient. Appeal Br. 28–30.

As stated above, it is well settled that simple substitution of one known element for another to obtain predictable results is an exemplary rationale that supports a conclusion of obviousness. *See KSR*, 550 U.S. at 401. Thus, Kopala (and the other cited references) need not recognize any problems for the Examiner’s reasoning to have a rational basis.

The Examiner finds, and Appellant does not refute, that the combined harness of Kopala and Gongwer discloses a device that differs from the

claimed invention only by the composition of its strap 24, which the Examiner proposes to modify with the fabric of Feder, whose functions were known in the art. Final Act. 17. The Examiner further proposes to modify the combined harness of Kopala and Gongwer by positioning an intersection of Gongwer's upper and lower straps slightly posterior to the patient's ear. *Id.* at 18. The Examiner contends that one skilled in the art could have substituted one known composition for another, and relocated the intersection with predictable results. *Id.* at 17, 18. Appellant does not refute that the results of such modification would be predictable.

Appellant appears to be arguing that the Examiner's proffered reasoning lacks a rational basis because one skilled in the art would not have looked to Feder or Byram to modify Kopala, as the force vectors to provide appropriate sealing in Kopala and Feder/Byram are different. Appeal Br. 29.

Regarding different sealing force vectors, the Examiner responds that the modification of Kopala in view of Feder and/or Byram would not have provided any changes to the force vectors required by Kopala, because the modification involves only strap material taught by Feder and a spatial configuration of the rear strap portion taught by Byram, the force vectors of Kopala's side straps 22 remaining unchanged. Ans. 72.

Lacking any evidentiary support regarding different force vectors being necessary in Kopala and Byram/Feder for appropriate sealing, and lacking a technical explanation regarding the cause and effect of such force vectors, we are not persuaded by Appellant's argument.

Regarding Feder and Byram not being directed to a sleeping patient, it is unclear why such a fact would cause the Examiner's reasoning to lack a rational basis.

For the reasons explained above, we are not persuaded that the Examiner's reason for combining the modified harness of Kopala with Feder and/or Byram lacks a rational basis.

Kopala and Baker

Regarding Rejections VII, VIII, and XII, Appellant argues that the Examiner's proffered reason for combining Kopala with Baker lacks a rational basis because (1) the Examiner employs circular reasoning, (2) Baker's adjustability is contrary to the teaching of Kopala, and (3) there is no problem of stability in Kopala. Appeal Br. 30.

As stated above, it is well settled that simple substitution of one known element for another to obtain predictable results is an exemplary rationale that supports a conclusion of obviousness. *See KSR*, 550 U.S. at 401. Thus, Kopala (and the other cited references) need not identify a stability issue (or improvement) for the Examiner's reasoning to have a rational basis.

The Examiner responds that the rejection proposes to replace Kopala's thin single band 24 with Baker's enlarged band 10, "which contacts a larger area of the back of user's head and avoids pulling or tangling of the user's hair (see abstract and Fig. 1-3)," which allows a "comfortable and conforming fit to the user's head" and "provides proper motivation for the combination in order to provide increased comfort and compliance." Ans. 73. We disagree with Appellant's contention that this reasoning is "circular."

Appellant fails to explain why Baker's "adjustment is contrary to the teachings of Kopala." Appeal Br. 30. Both Kopala and Baker discuss the

desirability of adjusting the harness about the user's head. *See, e.g.*, Kopala 2:58–64, 6:11–15; Baker 2:13 (“adjustable elastic strap”).

As explained above, we are not persuaded that the Examiner's reasoning lacks a rational basis.

Kopala and Petrie

Regarding Rejection IX, Appellant argues that the Examiner's proffered reason for combining Kopala with Petrie lacks a rational basis because “Kopala does not include a chin strap, nor is there any reason why one of ordinary skill would have been motivated to add a chin strap to Kopala.” Appeal Br. 30.

The Examiner responds that Petrie was “relied upon for the coupling member 20 between two strap elements of a harness,” which one skilled in the art would have considered “well-known in the art” to “provide adjustability between strap elements” according to a user's preferred comfort requirements, such that one skilled in the art would have “been motivated by such teachings in order to provide greater comfort between the harness and the user.” Ans. 73–74 (citing Petrie, Fig. 1, 3:1–8).

As stated above, it is well settled that simple substitution of one known element for another to obtain predictable results is an exemplary rationale that supports a conclusion of obviousness. *See KSR*, 550 U.S. at 401.

We are not persuaded that the Examiner's conclusion of obvious contains error. Appellant's argument does not address the combination of references proposed by the Examiner, which only utilizes Petrie's D-ring 20 (and not the chin cup) in the modified harness of Kopala. Final Act 25. Use of Petrie's D-ring 20 in Kopala's modified harness would not change the

basic function of the D-ring – which predictably includes adjustability of harness components and movement of such components relative to each other. We also agree with the Examiner that this adjustability would be understood by one skilled in the art to increase user comfort.

Rejections XIII–XXXVI—Double Patenting

Appellant argues all of the double patenting rejections as a group, contending that the rejections are unreasonable and must be withdrawn because each rejection includes at least one reference that is non-analogous art. Appeal Br. 31. The double patenting rejections include the prior art references relied on in the rejections under 35 U.S.C. § 103(a). Final Act 37–66. For the reasons explained above, we are not persuaded that any of the applied references are non-analogous art. We therefore sustain the double patenting rejections.

DECISION

We AFFIRM the rejection of claims 44–57, 62–65, 72, 73, 75, 82, 83, and 85 under 35 U.S.C. § 112 ¶ 1.

We AFFIRM the rejection of claims 31, 33, 34, 36, 39–43, 56, 57, 64, 65, 73, 83, and 84 under 35 U.S.C. § 112 ¶ 2.

We AFFIRM the rejection of claims 27, 33, 34, 39, 41–43, 56, 62–65, 72, 73, 75, and 82–85 under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, and Rudolph.

We AFFIRM the rejection of claims 29 and 36 under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, and Feder.

We AFFIRM the rejection of claims 31 and 40 under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, and Byram.

We AFFIRM the rejection of claim 57 under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, and Bierman.

We AFFIRM the rejection of claims 44–47, 55, 74, and 77 under 35 U.S.C. § 103(a) as unpatentable over Kopala, Rudolph, Feder, and Baker.

We AFFIRM the rejection of claims 48 and 49 under 35 U.S.C. § 103(a) as unpatentable over Kopala, Baker, Rudolph, Feder, and Lombard.

We AFFIRM the rejection of claims 51–54 under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, and Petrie.

We AFFIRM the rejection of claims 66 and 69 under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, and Feder.

We AFFIRM the rejection of claims 67 and 70 under 35 U.S.C. § 103(a) as unpatentable over Kopala, Gongwer, Rudolph, Feder, and Sullivan.

We AFFIRM the rejection of claims 68 and 71 under 35 U.S.C. § 103(a) as unpatentable over Kopala, Baker, Rudolph, Feder, and Sullivan.

We AFFIRM the rejection of claims 27, 29, 31, 33, 34, 36, 39–49, 51–57, 62–75, 77, 78, and 82–85 under various grounds of non-statutory obviousness-type double patenting.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED